



WATER MANAGEMENT

CITY OF DURHAM

Water & Sewer Fund and CIP

Proposed FY 2020 Rates | May 9, 2020

Outline

- Utility Overview
- Rate Objectives & Strategies
- Key Issues
- Capital Improvement Program
- Customer Consumption
- Proposed Rates
- Capital Facility Fees



Utility Overview

- Operate & maintain 2 water reservoirs and pump stations
- Operate & maintain 2 water treatment facilities
- Operate & maintain 2 water reclamation facilities
- Maintain over 1,480 miles of water lines
- Maintain over 1,100 miles of sewer lines
- Maintain 6 water storage tanks
- Maintain 65 pump stations
- Serve approximately 282,343 people
- Manage approximately 96,000 accounts



Rate Setting Objectives

- Affordability
 - Fairness and Equity
- Water Efficiency/Conservation
 - Continue tiered rate approach to promote conservation
 - Cost-Based
- Sustainability
 - Address increasing operating costs
 - Fund long-term capital needs

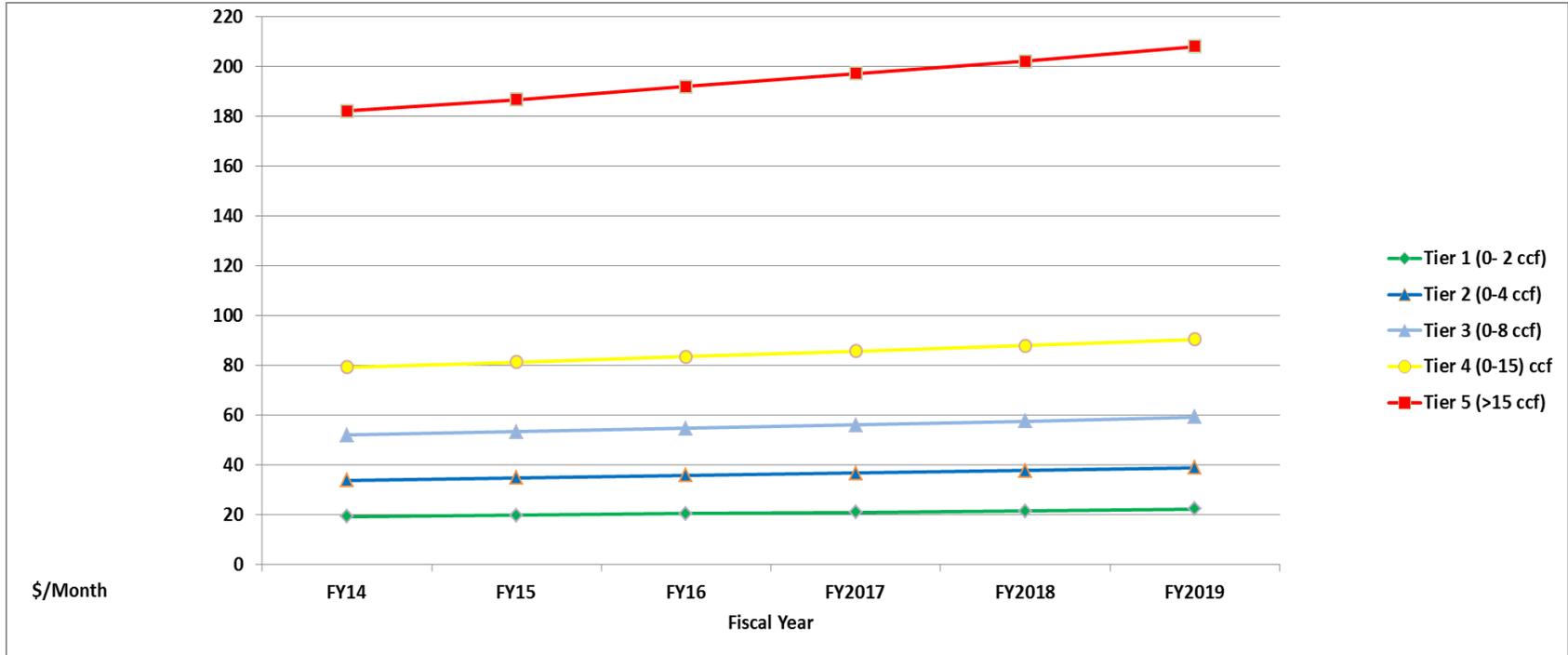


Affordability

- Meet needs of fixed income customers
- Utilize tiered rates since FY 2009; empowers customers to manage their costs
- Implement long term financial model which minimizes impacts to customer in lower tiers



Historical Average SFR Monthly Cost per Tier



Affordability - Payment Arrangements

- Assists customers experiencing temporary economic hardship with mechanism to spread out payment of water and sewer bills within a reasonable timeframe.
- Exempts customers from cut-off procedures as long as they make payments in accordance with the agreement and the provisions of the procedure.
- Keeps customers from incurring costly cut-off charges and late fees so that economic hardship is not increased.



Affordability - Hardship Fund

Objective: to provide a financial resource for customers who cannot pay their water/sewer bills, for whom the payment arrangement process will not work.

Implementation:

- Customers are referred to our partner, the Durham County Department of Social Services (DSS)
- If they qualify, they are provided a voucher to pay their outstanding bill
- Customers are eligible once/fiscal year

Benefits:

- Treats customers and rate payer equitably
- Minimizes the number of customer cut-offs
- Creates a “clean slate” for water/sewer bills going forward

For customers who do not meet DSS criteria, staff provide a list of organizations that also offer financial support.



Water Efficiency & Conservation

- Durham established the *first* water conservation program in North Carolina (1994).
- Overarching goal – manage the City’s water resources by providing tools and information to customers promoting water efficient behaviors and practices.
- Tools include:
 - *Water Use Assessments* – for a \$10 charge on the water bill, customers (residential and small commercial) receive a thorough evaluation of fixtures, appliances and behaviors (proposing increase to \$25 to recover partial cost)
 - *Save Water Kits* offered year-round for \$3.00 each
 - *Multiple outreach opportunities* – Fix-a-Leak Week, Imagine a Day w/o Water, Mayor’s Challenge, Earth Day & CenterFest
 - *Alternate Day watering* schedule enforced year-round
 - *Toilet rebate program* – credit on water bill up to \$100 for installation of EPA WaterSense toilet
 - *Tiered rate structure* for Single Family Residential Customers



Sustainability

- Maintain adequate supply of safe drinking water for all citizens
- Protect the environment through effective wastewater treatment, conservation and infrastructure maintenance
- Maintain compliance with permits & regulatory requirements
- Capital investment for utility infrastructure
- Long range financial plan
- Emergency and business continuity planning
- Meet customer/resident expectations



Multi-Year Rate Strategy

- Long Term Financial Model
- Cover increasing operating and regulatory costs via moderate sustainable rate increases
- Provide funding for CIP implementation
- Structure future borrowing to smooth impact of rate increases
- Raise rates sufficiently to cover future debt service covenants on large revenue bond issues
- Reward conservation efforts by maintaining lower rates for water efficient customers



Revenue Bond/Debt Strategy

- Spend down reserves over time to:
 - minimize revenue bond requirements
 - maintain 180 days operating costs reserve - about \$37 M
- Interest-only “Line of Credit” borrowing to smooth out rate increases
- Fixed rate refinancing on periodic basis
- Managing debt to the benefit of rate payers, not to maintain high bond ratings
- Strategy will still ensure reasonable interest rates

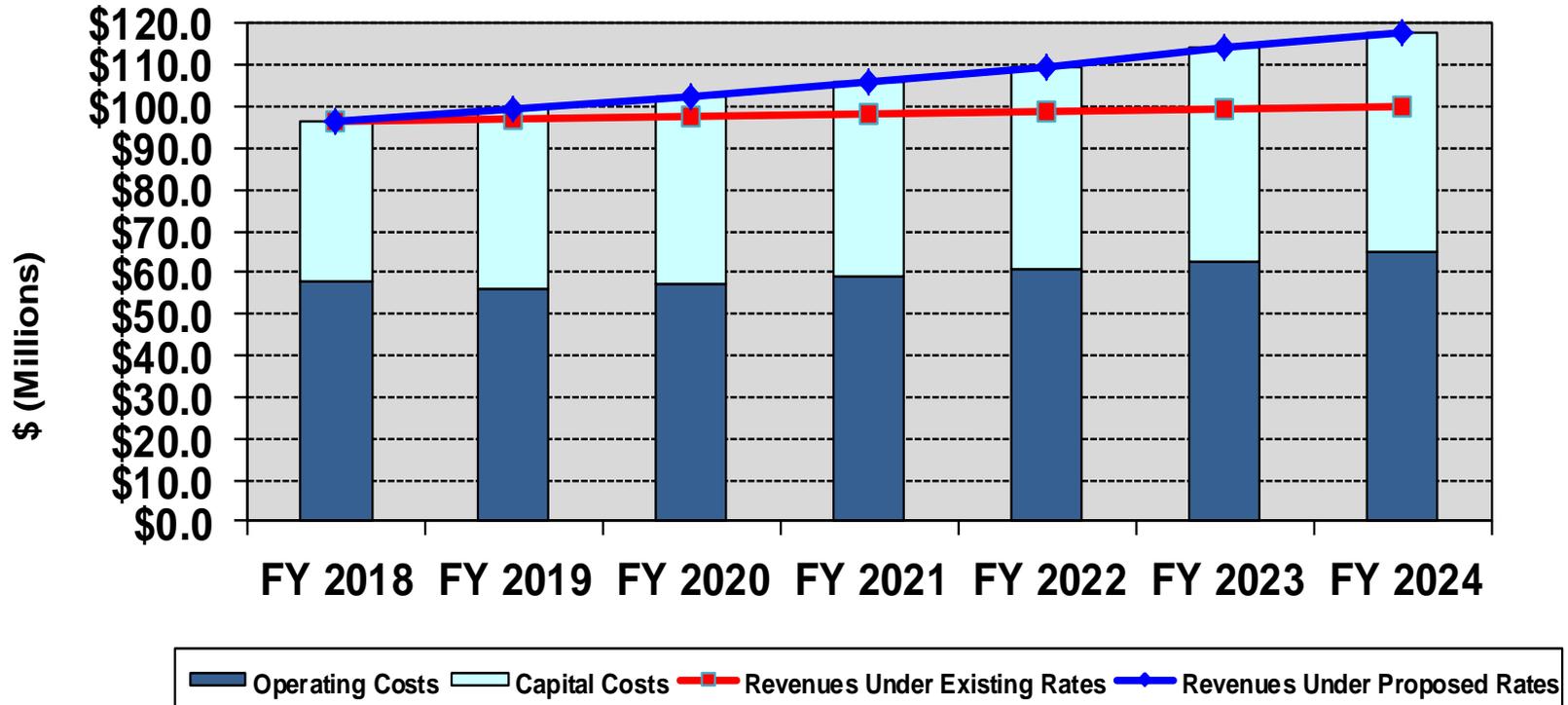


Key Issues

- Capital Project budget requests is \$161 M in FY20
 - \$502 M in spending over next 3 years
- Utilize “Line of Credit” borrowing for future capital needs, followed by fixed rate refinancing when reaching an efficient amount
- Align borrowing with cash spending on capital projects
- Recognize that water efficiency/restrictions and economy continue to keep demand relatively flat
- Use reserves in prudent manner
- Maintaining adequate debt service coverage to minimize interest expense



Projection of Water & Sewer Revenue Requirements



Capital Improvement Program



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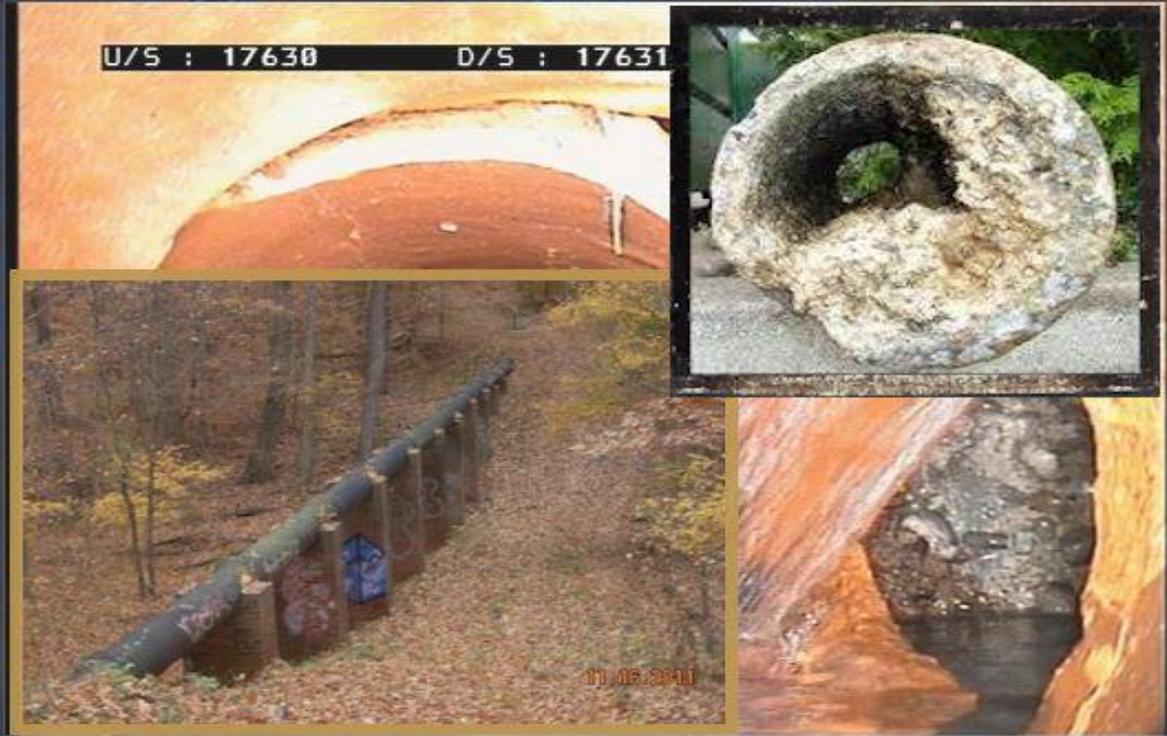
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Sewer Collection System



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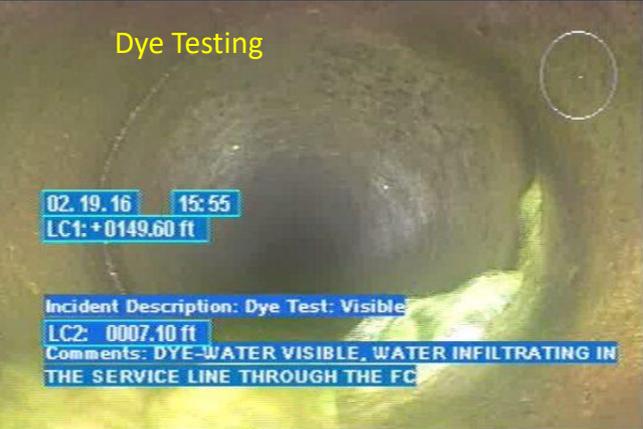
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Pipeline Rehabilitation

Dye Testing



Smoke Testing



Cured In Place Pipe



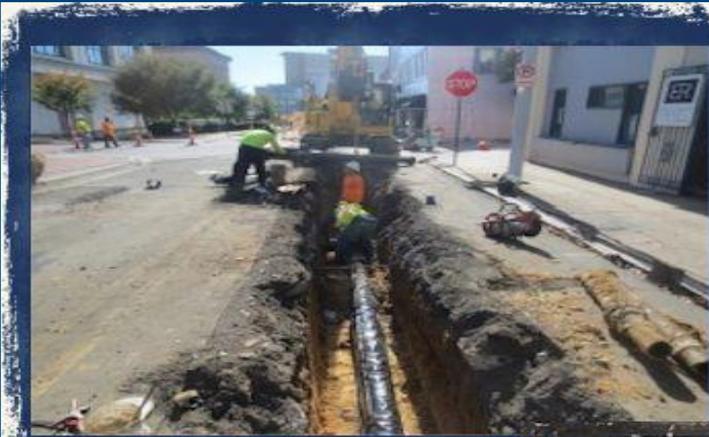
Open Cut Replacement



Point Repair



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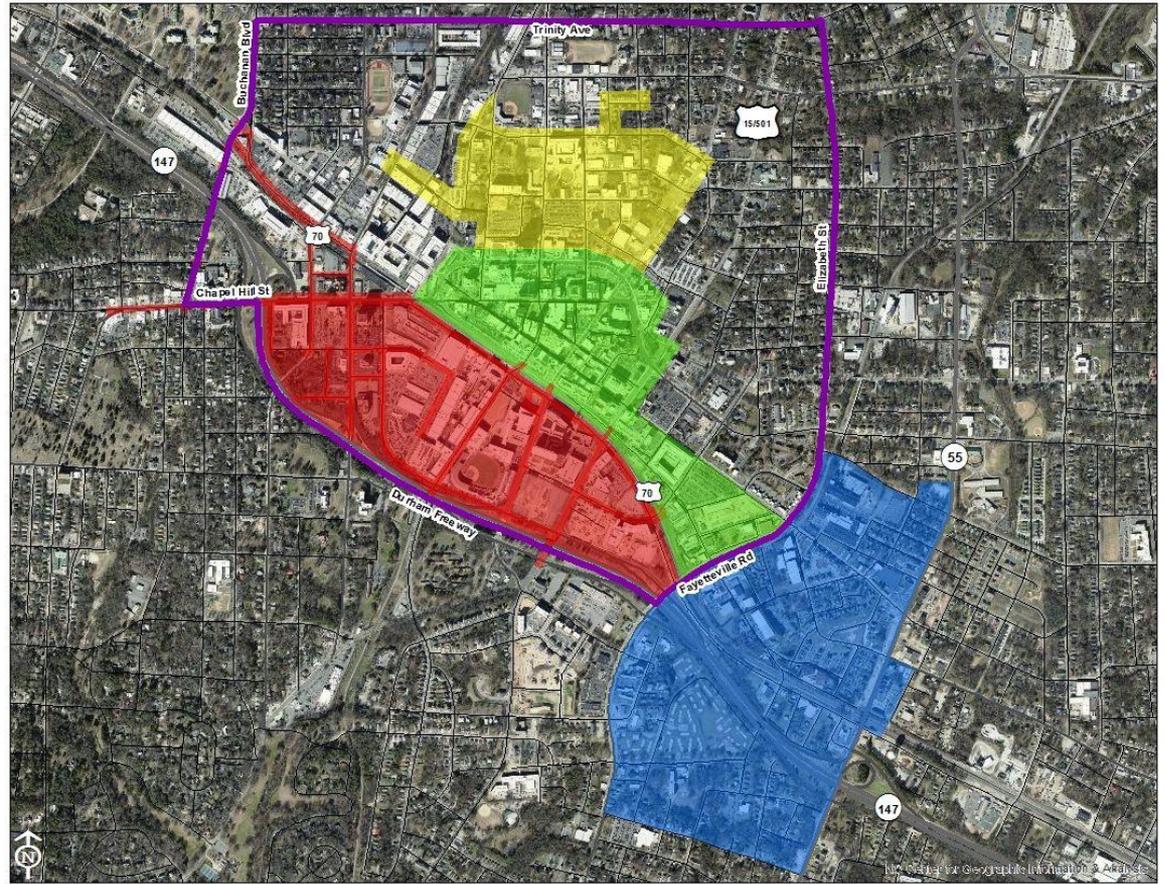


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Water Distribution System

Large Water Main Replacement Projects

-  Downtown Loop
Completed Summer 2016
-  Central Park
Under Construction
-  American Tobacco
Phase I Under Construction
-  East Durham
Eval/Design Award March 2019



Dams & Reservoirs



Williams WTP



Water Treatment Plants



Brown WTP

Williams WTP (under construction)





New apron @
Williams WTP



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Groundbreaking Ceremony @ Brown WTP October 2016

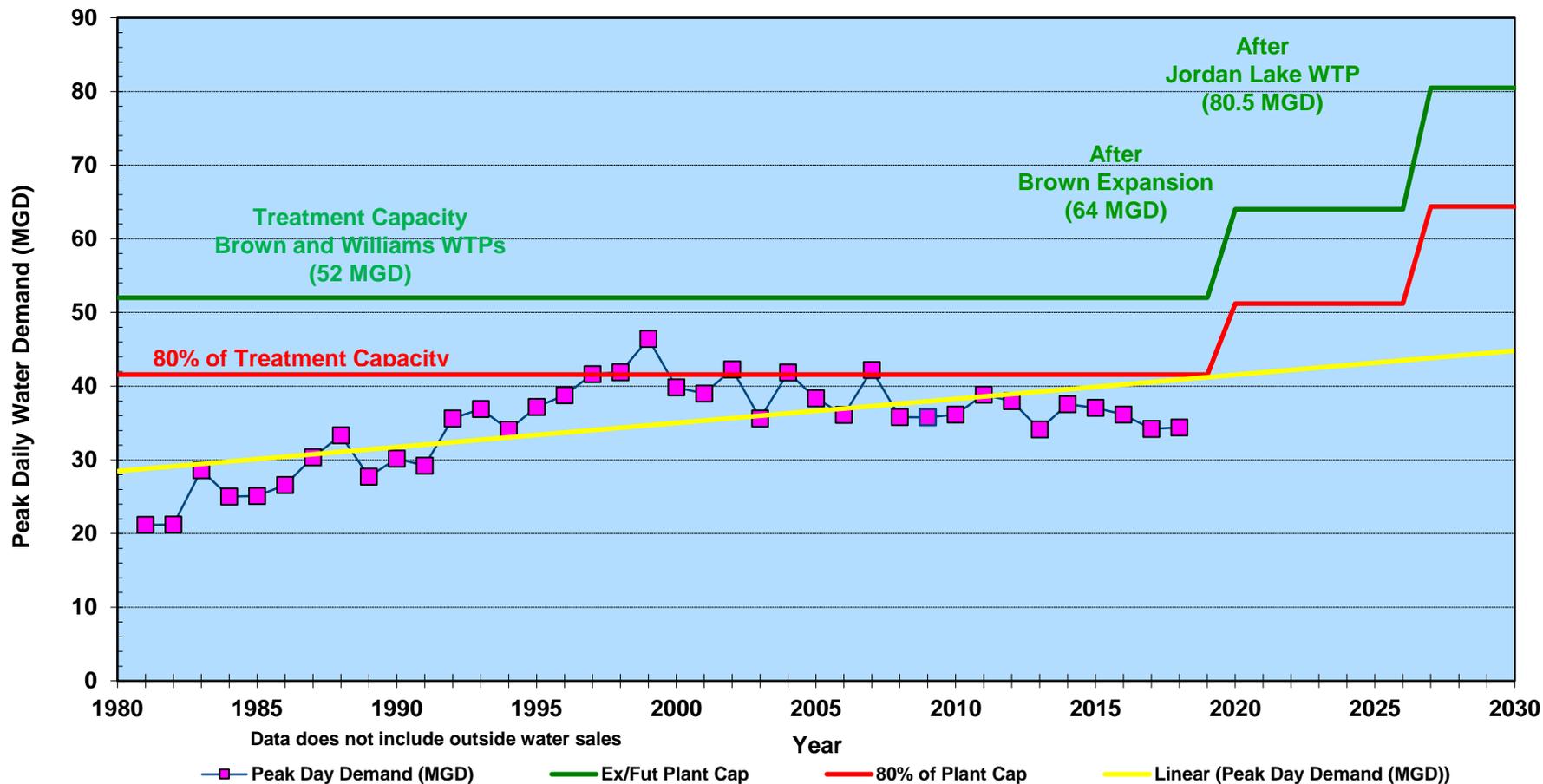


Brown WTP (under construction)

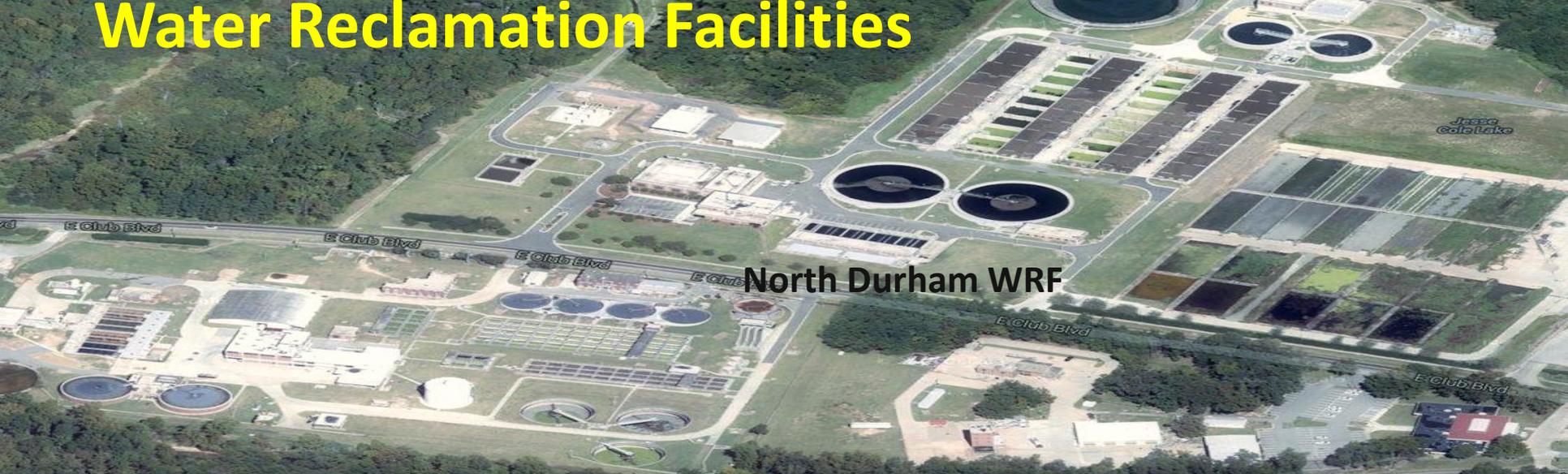


Peak Daily Water Supply & Demand Projection

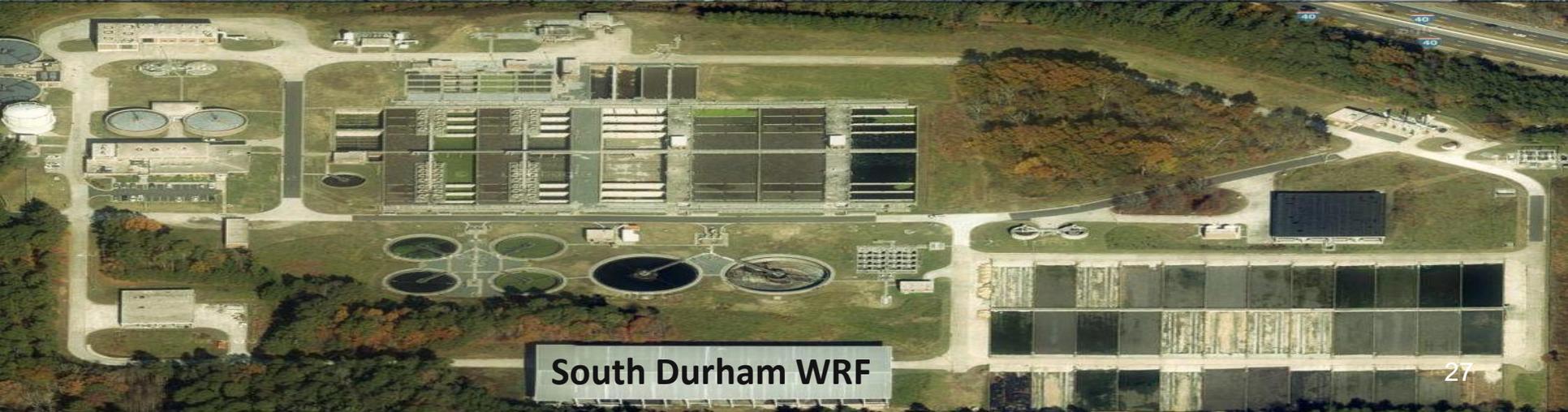
Department of Water Management - 2018



Water Reclamation Facilities



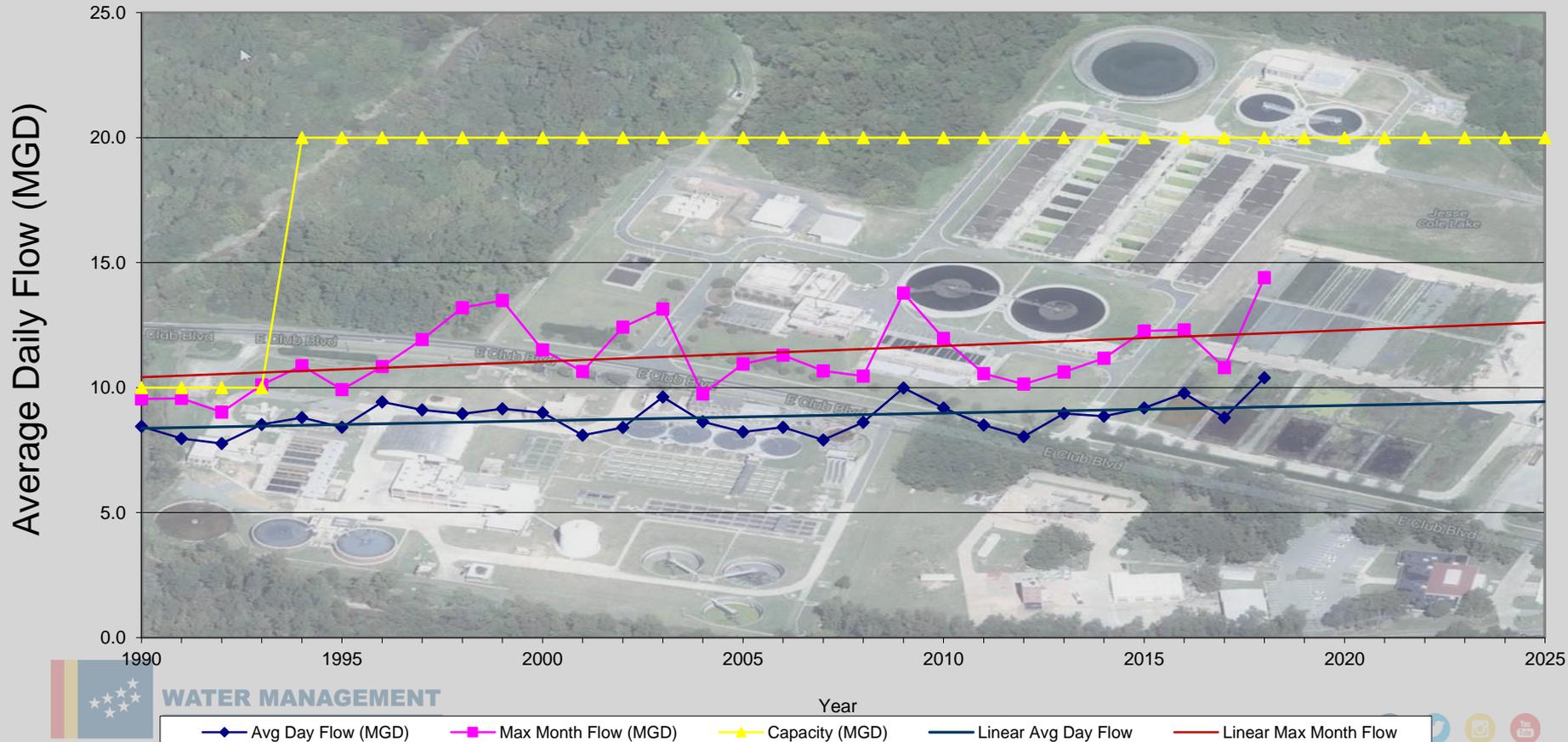
North Durham WRF



South Durham WRF

NDWRF Flow Rates and Capacity Projection

Department of Water Management - 2018

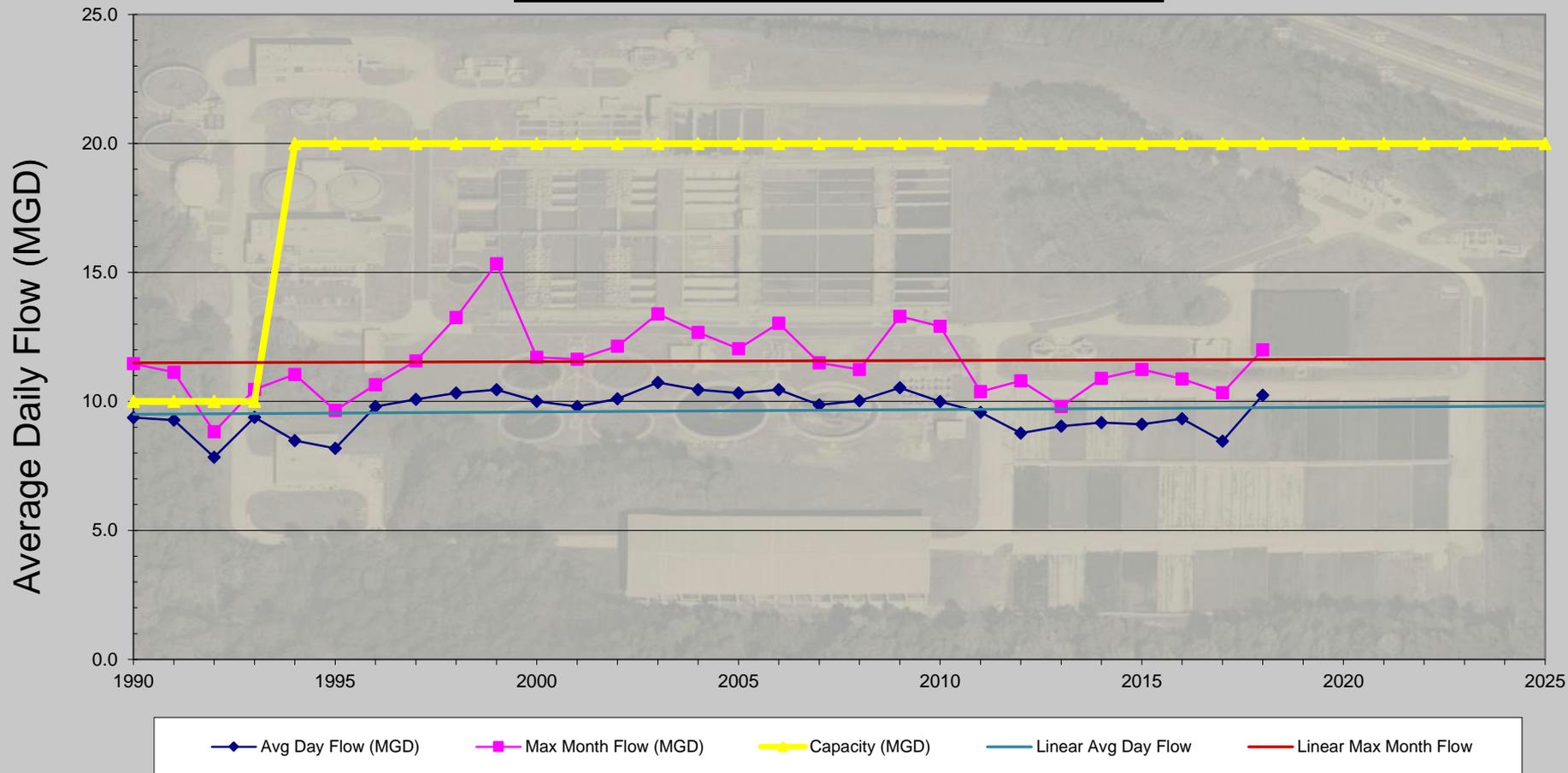


WATER MANAGEMENT

◆ Avg Day Flow (MGD)
 ■ Max Month Flow (MGD)
 ▲ Capacity (MGD)
 — Linear Avg Day Flow
 — Linear Max Month Flow

SDWRF Flow Rates and Capacity Projection

Department of Water Management - 2018



Typical Timeframes For Projects

- Lake Development/New Plants – 10 Years
- Plant Expansion/Renovation – 4 Years
- Major Pipelines – 4 Years
- Rehabilitation Projects – 2 years



Overall CIP Strategy

- Continue to fund rehabilitation programs for dams, treatment facilities, sewer collection and water distribution systems
- Continue Jordan Lake initiatives
- Implement necessary improvements to meet regulatory requirements, compliance with Falls and Jordan Lake Rule vital
- Continue to fund utility efficiencies



Capital Improvement Program

- Anticipate significant spending as more projects move out of the design phase and into construction phase
 - FY20 - \$ 161 M
 - FY21 - \$ 180 M
 - FY22 - \$ 161 M
- Major construction projects will be occurring at all DWM facilities



Proposed Capital Funding

(in \$Million)

	FY 20	FY 21	FY 22	FY 23	FY 24	Total
Water Projects	51.5	65.5	46.1	21.0	33.7	217.8
Sewer Projects	66.3	103.6	85.8	70.5	44.6	370.8
CIP Funding Required	117.8	169.1	131.9	91.5	78.3	588.6



CIP – Projected 5-Year Appropriation

Project	FY 20-24 millions
Dams & Reservoirs	\$20.9
Water Treatment Facilities	\$41.5
Water Reclamation Facilities	\$116.5
Water Distribution System	\$152.9
Sewer Collection System (includes SRLS)	\$254.2
Total	\$588.6



CIP – Water Projects

Project	FY 20 millions
Water Distribution System Rehabilitation	\$40.0
Water Facilities Rehabilitation	\$5.0
Downtown East-West Reinforcing Main	\$4.0
Water Extensions & Improvements (DPW)	\$2.5
Total Water	\$51.5

CIP – Wastewater Projects

Project	FY 20 millions
Sewer Collection System Rehabilitation	\$56.5
Wastewater Processes Rehabilitation	\$ 5.0
Southeast Regional Lift Station	\$ 4.8
Total Wastewater	\$66.3



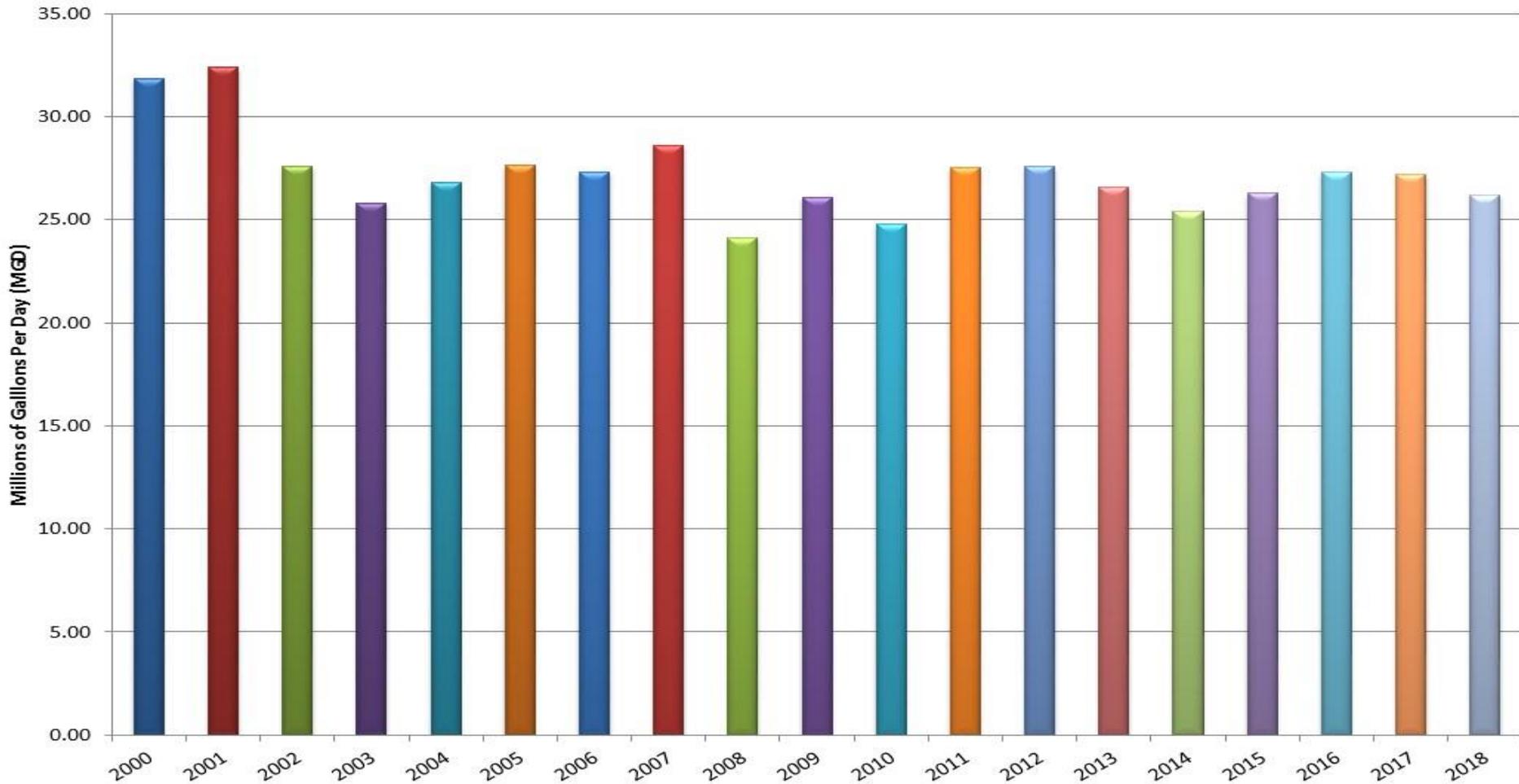
Water Usage/Consumption



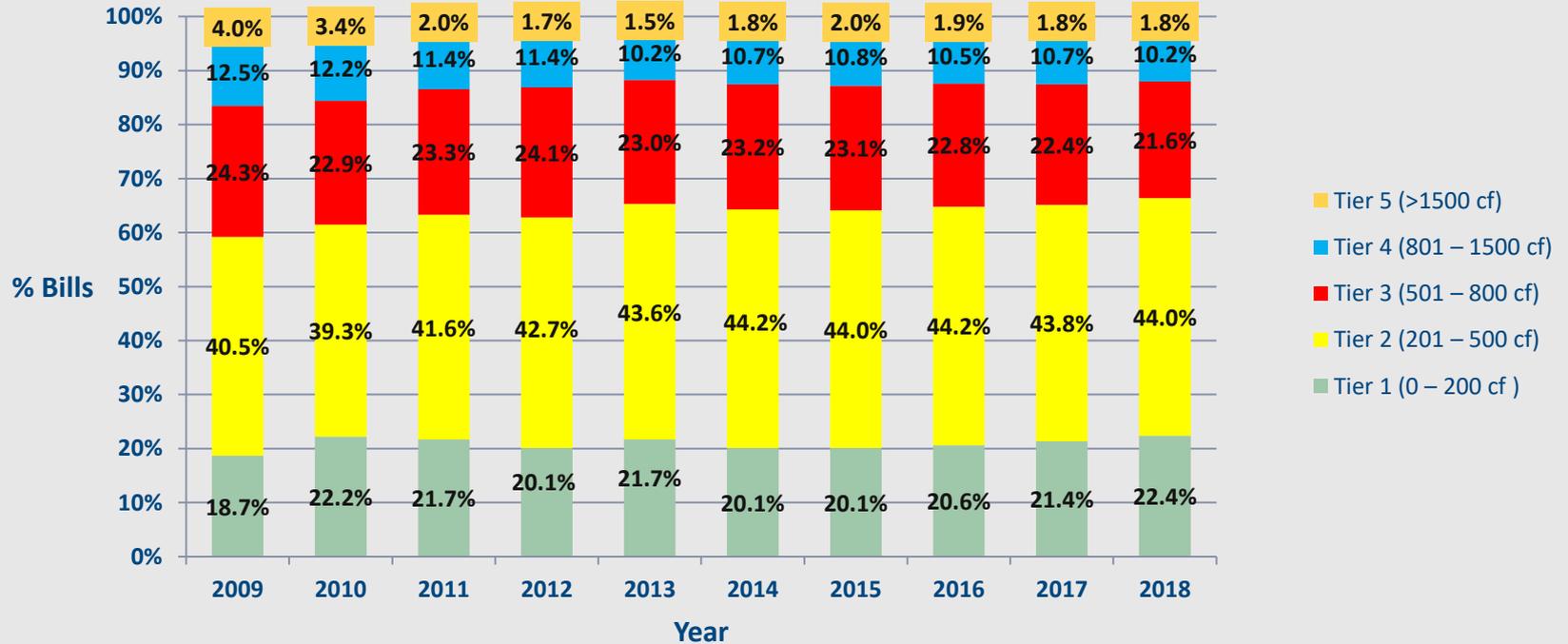
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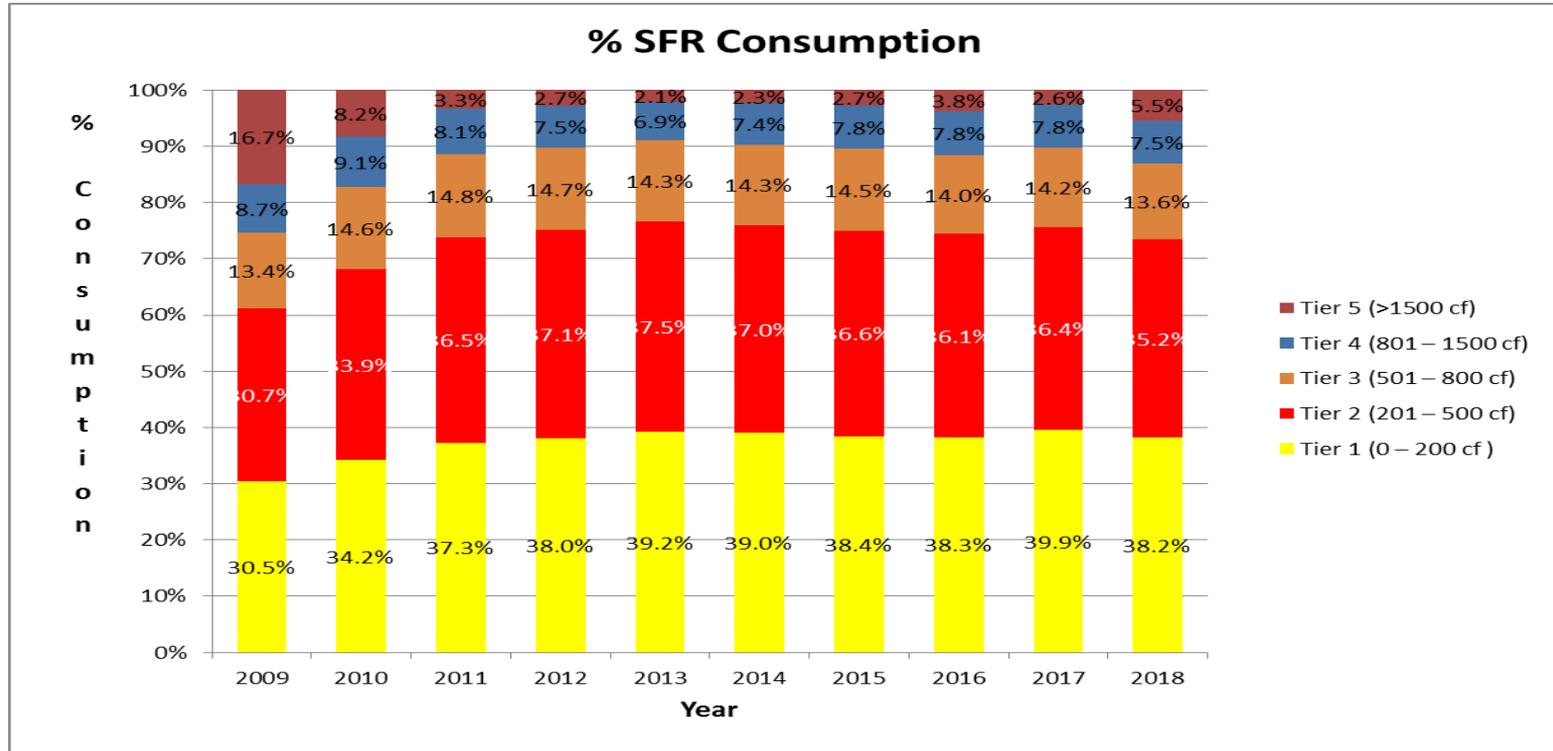
Average Daily Finished Water Produced 2000 - 2018



Trend - Percent of SFR Bills by Tiers



Trend - Percent of SFR Consumption by Tiers



FY 2020 Water & Sewer Rates



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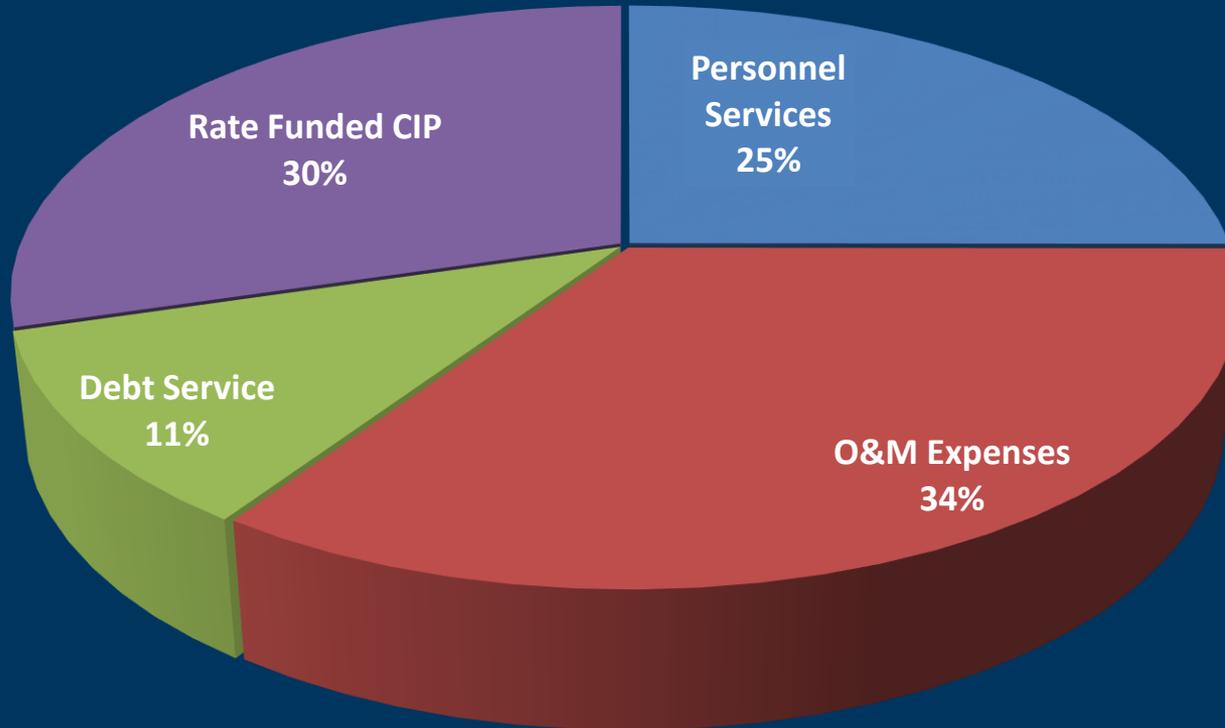
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Major FY 2020 Budget Components



FY 20 Water & Sewer Rates - Proposed

- Modest increase in consumption charges (all tiers)
- Continue penny per tier increase for watershed protection
- Based on usage, customers will see different percentage increases in actual bills
- Will impact residential customers with higher rates as usage moves into higher tiers:
 - Targets elective water uses
 - Minimizes impact to water efficient customers
- Continue to bill Commercial, Multi-Family Residential, Industrial and Institutional customers at Tier 3 rates
- Outside double rates continue
- Differential sewer charges continue for customers served by County wastewater plant



Proposed FY 2020 SFR Water Rates

	FY 19 Rates	FY 20 Rates
Monthly Water Rates		
Service Charge	\$ 7.32	\$ 7.51
Volume Charge - Tiered Rates (per 100 cubic foot - ccf)		
Tier 1 (0 - 2 ccf)	\$ 1.95	\$ 2.00
Tier 2 (>2 - 5 ccf)	\$ 2.94	\$ 3.01
Tier 3 (>5 - 8 ccf)	\$ 3.22	\$ 3.30
Tier 4 (>8 - 15 ccf)	\$ 4.21	\$ 4.31
Tier 5 (>15 ccf)	\$ 6.30	\$ 6.46
Monthly Sewer Rates		
Service Charge	\$ 8.09	\$ 8.29
Volume Charge (per ccf)	\$ 4.20	\$ 4.33

FY20 – Proposed 2.8% Rate Increase for Average Customer

- Cover:
 - Operating Budget
 - Pay for Performance
 - Pay-Go CIP Funding
 - Debt
 - Fleet Replacement Fund
- Maintain proper debt covenants
- Maintain operating reserves



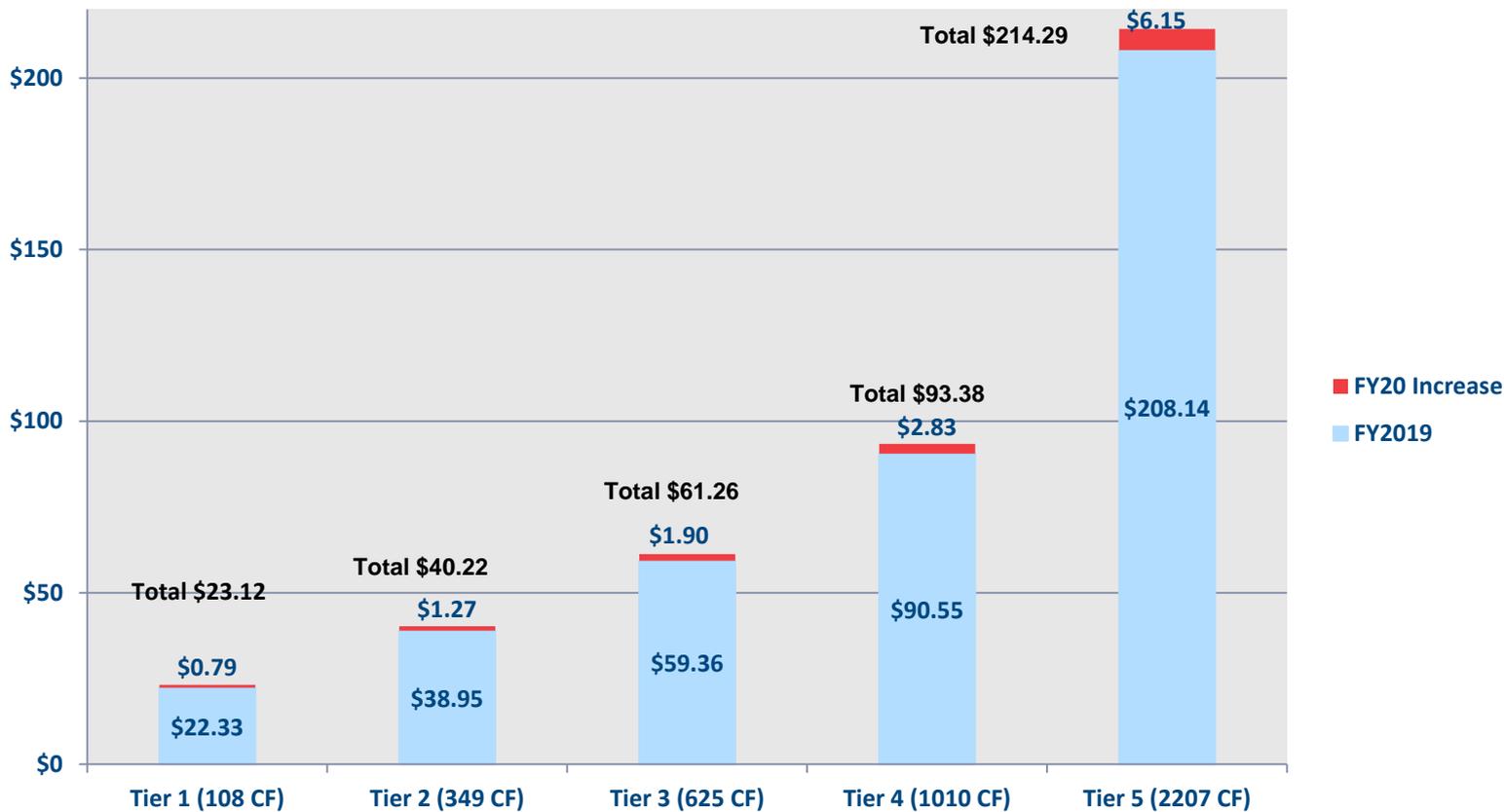
Comparison of Monthly Average Residential

Inside Water & Sewer Bill FY19 vs. FY20

	Min % Change in Tier	Avg. Customer % Change in Tier	Max % Change in Tier
Tier 1 (0-200 cf)	2.5%	2.7%	2.7%
Cost	\$0.39	\$0.58	\$0.75
Volume used (cf)	0	108	200
Tier 2 (201-500 cf)	2.7%	1.7%	1.7%
Cost	\$0.75	\$0.65	\$0.85
Volume used (cf)	201	349	500
Tier 3 (501-800 cf)	2.7%	2.6%	2.8%
Cost	\$1.35	\$1.61	\$1.98
Volume used (cf)	501	625	800
Tier 4 (801-1500 cf)	2.8%	2.8%	2.8%
Cost	\$1.98	\$2.46	\$3.59
Volume used (cf)	801	1010	1500
Tier 5 (>1500 cf)	2.8%	2.7%	N/A
Cost	\$3.59	\$5.57	∞
Volume used (cf)	1501	2207	∞

Comparison of Monthly Average Residential Inside Bill

FY19 vs. FY20



Comparison of Monthly Commercial Inside Bill

FY19 vs. FY20



Differential Sewer Rate Structure for Customers Served by County WWTP

- Separate service charge and sewer usage rates for customers served by County wastewater plant
- Service charges differ depending upon whether the sewer lines are owned and maintained by the County or by the City
- City reimburses the County for sewer usage at the County's established rate
- Usage fees reflect Durham County costs



Proposed FY20 Sewer Rates

Triangle Basin Customers (Durham County WWTP)

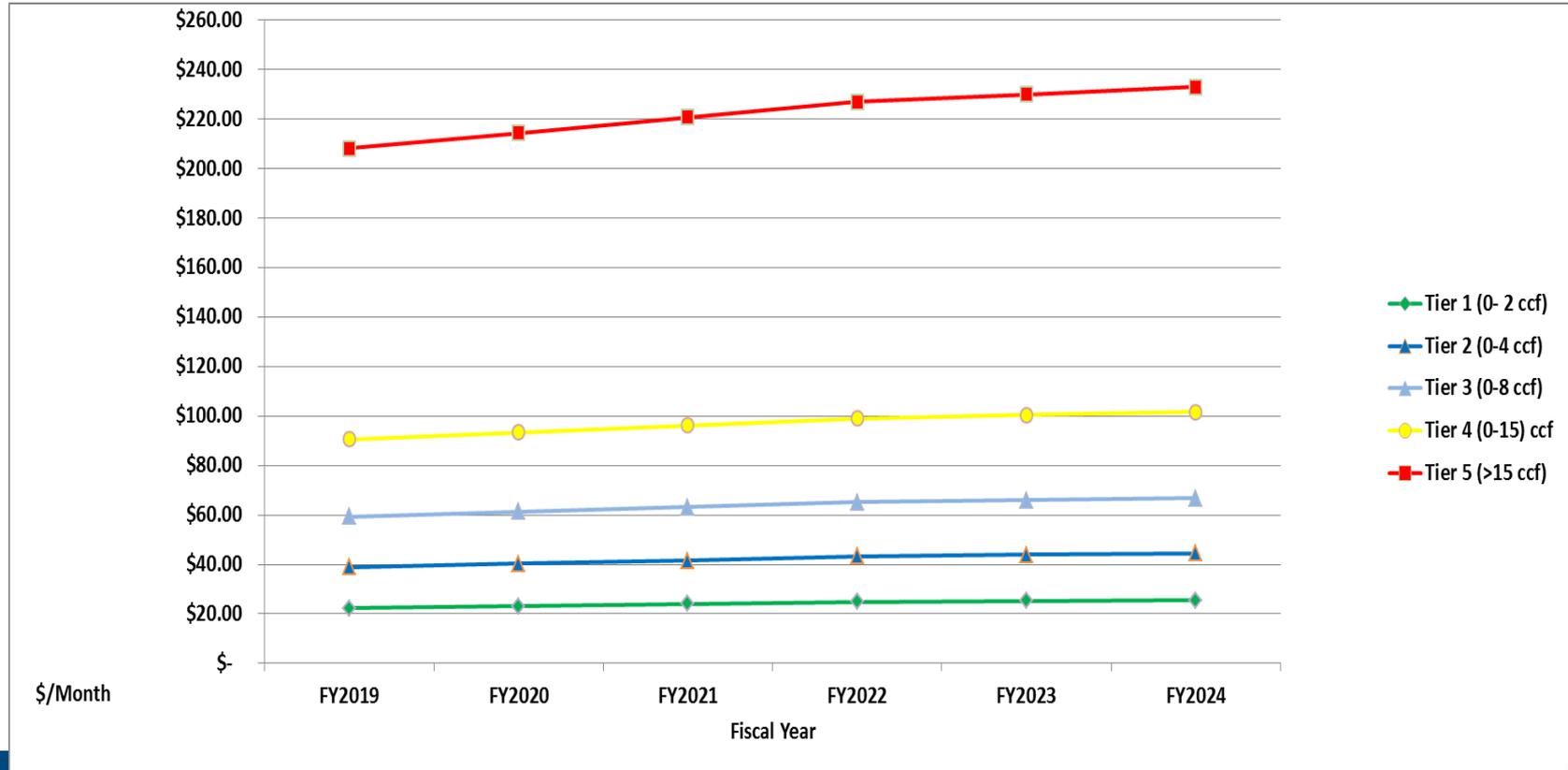
Located in/out of City Limits	Owner of Sewer Lines	Monthly 5/8" Service Fee	Usage Charge/CCF**
Inside	City	\$ 8.29	\$4.68
Outside	City	\$16.58	\$9.36*
Inside	County	\$ 4.53 **	\$4.68
Outside	County	\$ 4.53 **	\$4.68

* Double County rates

**Proposed rates



Projected Average SFR Monthly Cost per Tier



Proposed Average Rate Increases for next 5 years

	FY 20	FY 21	FY 22	FY 23	FY 24
<u>Proposed Rate Increase</u>	<u>2.8%</u>	<u>3.4%</u>	<u>3.5%</u>	<u>3.5%</u>	<u>3.5%</u>

- FY 20 rates include overall 2.8% increase in water and 2.8% sewer
- % increase will have to rise; associated with increased CIP spending
- Jordan Lake and its potential impacts



Long Term Effect of Strategic, Moderate Increases

- Cover increasing operating and maintenance costs
- Fund increasing rehabilitation and renewal costs
- Provide source for pay-as-you-go funding for capital projects
- Limit the need for large revenue bond spending
- Keep rates lower over extended periods of time
- Strengthen the financial position of the utility and the City



NC Water and Wastewater Rates Dashboard
Rates as of January 1, 2019
Last updated: February 12, 2019

Durham

Rates Comparison

Financial Benchmarks

Characteristics

Links

Edit Data or Add Utility

Select residential bill and monthly consumption amount

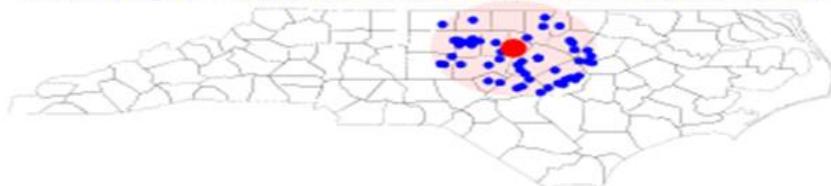
Water Bill Sewer Bill Water + Sewer Bill

4,000 gallons
535 cubic feet

Monthly Water & Sewer Bill: \$51.00

Select comparison group: Within 50 miles distance

Comparing to all utilities within 50 miles of your utility



53 rate structures compared

Effects of raising rates by: 0%

Bill Comparison

Water & Sewer Bill at
4,000 gallons
Median: \$65.86



Min \$36.00 Max \$120.18

Conservation Signal

Water & Sewer Price/1,000
gallons, after 10,000 gallons
Median: \$12.19



Min \$5.50 Max \$24.97

Cost Recovery

Operating
Ratio Incl. Deprec. 2018



Median Affordability

Annual Water & Sewer Bills as
% MHI



NC Water and Wastewater Rates Dashboard
Rates as of January 1, 2019
Last updated: February 12, 2019



Durham

Rates Comparison | Financial Benchmarks | Characteristics | Links | Edit Data or Add Utility

Select residential bill and monthly consumption amount

Water Bill Sewer Bill Water + Sewer Bill

4,000 gallons
535 cubic feet

Monthly Water & Sewer Bill: \$51.00

Select comparison group: Similar Number Of Accounts

Comparing to utilities also with more than 25,000 accounts

25 rate structures compared

Effects of raising rates by: 0%

Bill Comparison

Water & Sewer Bill at
4,000 gallons
Median: \$59.94

Min \$40.90 Max \$120.18

Conservation Signal

Water & Sewer Price/1,000
gallons, after 10,000 gallons
Median: \$10.81

Min \$7.00 Max \$19.02

Cost Recovery

Operating
Ratio Incl. Deprec. 2018

Median Affordability

Annual Water & Sewer Bills as
% MHI

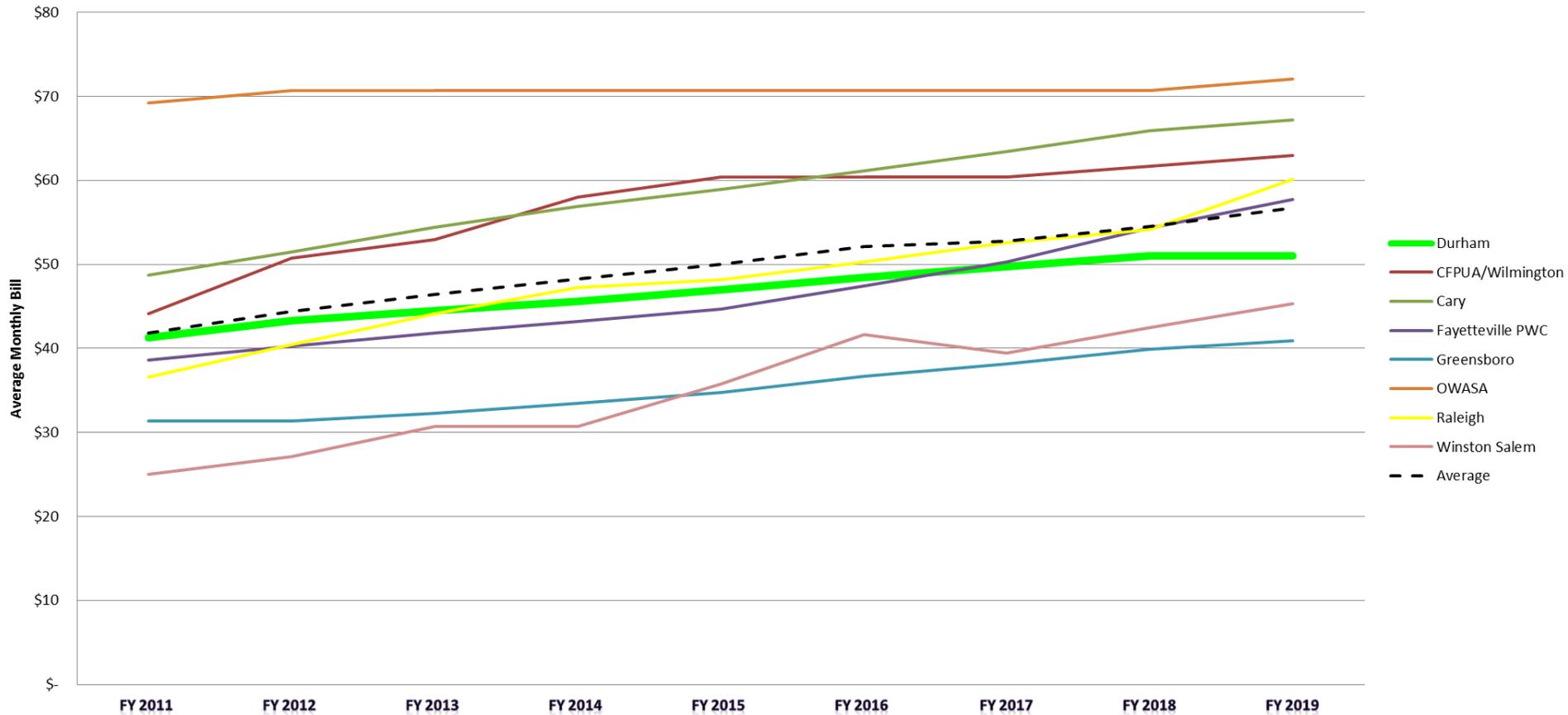
Monthly Water & Sewer Bill Comparison

4000 gallons (5.35 CCF) monthly usage (water & sewer service) – Tier 3

	FY 2019 Average Bill	FY 2020 projected Average Bill	Proposed FY 2020 increase
Durham	\$ 51.00	\$52.43	2.8%
Winston Salem	\$ 45.34		TBD
Greensboro	\$ 40.90		TBD
Raleigh	\$ 60.11		TBD
Charlotte	\$ 53.45		
Fayetteville PWC	\$ 57.72		
CFPUA/Wilmington	\$ 62.93	\$62.93	No rate change
Cary	\$ 67.22		TBD
OWASA	\$ 72.07	\$74.95-\$76.39	4-6%
Average	\$ 56.75		



Comparative Monthly Cost for 4000 Gallons Water and Sewer



Capital Facilities Fee (CFF)

- Charged for new meter installations
- CFF study not required for FY20
- Rates remain the same based on FY19 study since new legislation does not allow increases without new study



Questions



Percent of all Consumption

(SFR, ICI, IO) by Tier

Tier	% of Consumption 2017	% of Consumption 2018
Tier 1 (0 – 200 cf)	15.3%	15.1%
Tier 2 (201 – 500 cf)	14.4%	14.0%
Tier 3 (501 – 800 cf)	64.1%	62.5%
Tier 4 (801 – 1500 cf)	3.4%	3.0%
Tier 5 (>1500 cf)	2.7%	5.5%

